

## **SUSTAINABLE DEVELOPMENT CHALLENGE GRANT RECIPIENT FOR 1997: USE OF RAIN DETENTION GARDENS TO INCREASE THE QUALITY AND DECREASE QUANTITY OF STORMWATER RUNOFF IN URBAN AREAS**

**Grant Recipient:** Naamans Creek Watershed Association  
**Grant Title:** Use of Rain Detention Gardens to Increase the Quality and Decrease Quantity of Stormwater Runoff in Urban Areas  
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**Project Period:** 8/15/98 - 8/15/00  
**Affected Areas:** Naaman Creek Watershed, New Castle County, Delaware

### **INTRODUCTION AND PROJECT RATIONALE**

The Naamans Creek Watershed is located in New Castle County, Delaware, with headwaters in Bethel Township, Delaware County, Pennsylvania. Over the years, the watershed has been subject to intense human encroachment (residential, commercial, and road) and approximately 87% of the watershed's land area is now developed.

Due to the extent of this development, the watershed's natural ability to act as a ground water recharge area or natural filtering station for storm water has been greatly reduced. Heavy rains result in bank erosion and the flow of excess nutrients, suspended solids and toxins into the waterways – severely affecting aquatic habitats and the surrounding beauty.

This project will address both environmental and aesthetic issues relating to stormwater treatment. *Rain detention gardens* will be built as alternatives to traditional stormwater management systems to demonstrate their ability to effectively manage stormwater in an attractive and low-maintenance way. These gardens will be installed on approximately seven sites (five residential, one commercial and one public open space) to serve as learning tools. By demonstrating how community members and businesses can implement attractive, low-maintenance and inexpensive solutions to water quality problems, it is believed that water quality problems and flooding can be improved.

### **SCOPE OF WORK**

Money obtained from the EPA Sustainable Development Challenge Grant has been allocated over a two-year period to achieve the following results:

1. Contract with firms to design, install, plant, inspect, & maintain rain detention gardens in clay solids
2. Prepare educational/informational brochures and videotapes focusing on:
  - Explaining/defining watershed management and sustainable development
  - Documenting land preparation, gravel, and soil requirements for a "typical" rain garden, as well as possible suppliers of materials
  - Describing multilevel vegetation and providing information of appropriate plants and where to buy

3. Provide tours of rain detention gardens on specified days
4. Contact individual civic associations & mail literature to each of these within the New Castle County municipality
5. Launch an annual garden inspection day where landscapers would be available for questions
6. Develop a site registration system and participation certificate

The long range goals are 1) to directly involve individuals landowners and businesses in stormwater management on their own property via an attractive, low-cost and low-maintenance system. In doing so, this project would 2) improve the health of Naamans Creek and its watershed through better water quality, increased recharge of groundwater and stream base flow, and reduced flooding.

### **PARTNER ORGANIZATIONS**

The following partners represent the local municipalities, regional businesses, learning institutions, and government agencies:

- Tetra Tech associates
- Master Gardeners
- Harry's Savory Restaurant

In addition, the project will provide literature to each civic association and municipality, as well as libraries and cooperating businesses, in New Castle County. Civic organizations, landscape designers, and nurseries providing advice and support for the development of the project include the Delaware Center for Horticulture, the Delaware Nature Society, and the Delaware Department of Natural Resources and Environmental Control..